

Patent Claims

1. A refrigerant condenser, in particular for motor vehicle air-conditioning systems, consisting of a tube/rib block and of at least one header tube arranged on one side or header tubes arranged on both sides and also of a header which is arranged parallel to a header tube and which is in refrigerant connection with the header tube (5) via overflow orifices (8, 9) and is designed as a one-piece tube (15).
2. The condenser as claimed in claim 1, characterized in that the tube (15) is designed as a welded tube.
3. The condenser as claimed in claim 1, characterized in that the tube (15) is produced by extrusion.
4. The condenser as claimed in claim 1, characterized in that the tube (15) is designed as a folded tube.
5. The condenser as claimed in claim 1, characterized in that the tube (15) is produced by reverse extrusion.
6. The condenser as claimed in one of claims 1 to 5, characterized in that the overflow orifices (8, 9) are designed as rim holes which form overflow ducts.
7. The condenser as claimed in claim 6, characterized in that the rim holes (16, 17; 31, 32) are arranged on the tube (15, 30) of the header and are directed outward.
8. The condenser as claimed in claim 6, characterized in that the rim holes (18, 19; 33, 34) are arranged on the header tube (5, 28) and are directed inward or outward.

9. The condenser as claimed in claims 6, 7 and 8, characterized in that the rim holes of the tube (6, 15) and header tube (5) have different cross sections in size and are designed to engage telescopically one into the other.

10. The condenser as claimed in claims 6, 7 and 8, characterized in that the rim holes (31, 32; 33, 34) of the tube (29) and header tube (28) are arranged so as to butt onto one another and, in particular, have an identical end cross section.

11. The condenser as claimed in claim 10, characterized in that the rim holes (31, 32; 33, 34) are encased in each case by a tubular sleeve (40, 41).

12. The condenser as claimed in claim 10, characterized in that the rim holes receive a sleeve radially on the inside.

13. The condenser as claimed in claim 10, characterized in that the overflow orifices (108, 109) are provided with tabs (110, 111) which point out of the header tube and/or tube (115).

14. The condenser as claimed in claim 10, characterized in that between the header tube (28) and tube (29) is arranged at least one intermediate piece (37) with bores (38, 39, 108, 109) which receive the rim holes (31, 32; 33, 34) or tabs (110, 111), the bores being designed, in particular, continuously or as stepped bores.

15. The condenser as claimed in one of claims 1 to 5, characterized in that the overflow orifices (8, 9) are designed as tubular pieces (42, 43) which are inserted into plug-in orifices (44, 45; 46, 47) arranged in the

tube (29) and header tube (28) and which form overflow ducts.

16. The condenser as claimed in claim 13,
5 characterized in that the tubular pieces (42, 43) have a bead (42a, 43a) arranged approximately centrally and between the header tube (28) and tube (29).

17. The condenser as claimed in one of claims 1 to 5,
10 characterized in that the overflow orifices (8, 9) are formed by passage bores (50, 51) in a connection piece (49) which is arranged between the tube (29) and header tube (28).

18. The condenser as claimed in one of claims 1 to 5,
15 characterized in that the overflow orifices (8, 9) are formed by outwardly directed shaped-out portions (58, 59; 60, 61) arranged on the tube (57) and on the header tube (56) and having a preferably annular
20 contact face (62, 63).

19. The condenser as claimed in one of claims 6 to 14,
characterized in that the tube (6) and header tube (5)
are fixed to one another by joining.

20. The condenser as claimed in claim 15 or 16,
characterized in that the header tube (28) and the tube
(29) and also the connection piece (49) are fixed to
one another by tacking.

21. The condenser as claimed in one of the preceding
claims, characterized in that the overflow orifices
(8, 9) are formed by a plurality of parallel-connected
individual orifices.

22. The condenser as claimed in one of claims 1 to 15,
characterized in that the header tube (5) is of two-
part design and has a bottom part (5a) for receiving

the tube ends (3a) and a cover part (5b) in which the overflow orifices (8, 9) are arranged.

23. The condenser as claimed in one of the preceding
5 claims, characterized in that the header tube (5) and
tube (6) are additionally fixed to one another by means
of at least one common cover (48).